Rebuilt® Verified
Product Carbon Footprint
Limited Assurance

ISO 14067
ISO 14064-3
EN 15804+A2
rebuilt.eco/pcf

GGBFS - Slag

Independently Verified Product Carbon Footprint (PCF) Full Report

10 February 2026

Version 1.1

Rebuilt

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Document overview

This Product Carbon Footprint (PCF) report provides a transparent and verified account of the greenhouse gas (GHG) emissions associated with GGBFS - Slag.

This report has been prepared by the declaration owner using primary and secondary data. The report conforms to international standard ISO 14067 and it is compiled using a range of high quality data sources. The results of this report has been reviewed by a suitably qualified Rebuilt LCA professional and verified in accordance to ISO 14064-3. This report demonstrates the declaration owner's commitment to transparency, sustainability excellence and continuous improvement.

Users of this PCF are responsible for evaluating the applicability of the data for their intended purposes.

Benefits of using this Product Carbon Footprint

This document can be used to:

- Inform your customers about the embodied emissions in your products
- Meet procurement and tender requirements
- Identify hot spots and opportunities for making improvements in carbon intensity over time
- Input into mandatory corporate carbon disclosure reporting.

PCFs and EPDs: making comparisons

Both Product Carbon Footprints (PCFs) and Environmental Product Declarations (EPDs) are based on lifecycle assessment methodologies (ISO 14044), so their results are technically interoperable. However, comparisons should be approached with care:

- Data sources differ. Even within the same product category, PCFs and EPDs may draw on different reference datasets, assumptions, or cut-off rules, leading to variation in results.
- Rules matter. Results are only directly comparable if they apply the same Product Category Rules (PCRs), which set the boundaries and methods for assessment.
- Timing matters. PCFs and EPDs last for five years. Assessments carried out at different times may reflect changes in datasets, methodologies, or manufacturing processes.
- Lifecycle stages vary. Not all PCFs and EPDs cover the same modules (e.g. raw materials, manufacturing, transport, use, end-of-life). Different system boundaries can significantly affect results. Use the breakdown tables to compare like-for-like.
- Detail drives accuracy. Expert interpretation is often needed to judge whether results are genuinely comparable and to avoid misleading conclusions.
- Project context is key. The most meaningful comparison comes from assessing products in the context of the whole project or structure, not in isolation.

Results at a glance

GGBFS - Slag

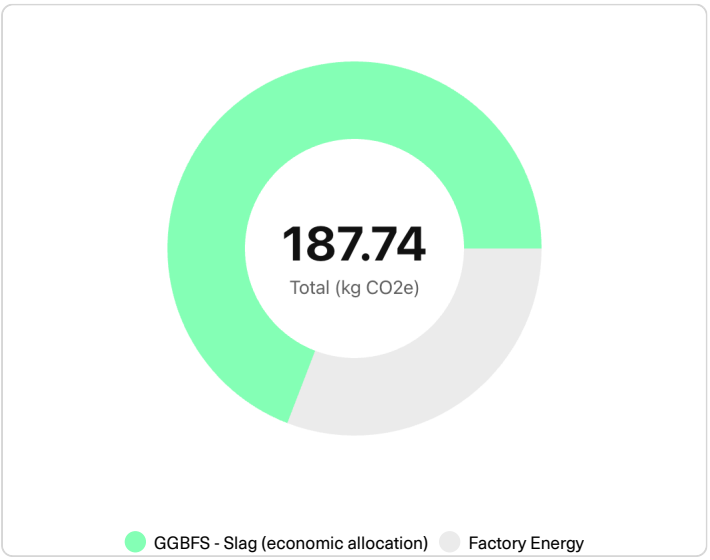
Cement Australia Pty Ltd

Total upfront carbon (Fossil)
(A1-A3)

187.74 Carbon Footprint
kg CO2e /tonne

Carbon impact (Fossil)

Relative carbon impact of the components of the product



Component name	Weight (kg)	kg CO2e	% of total kg CO2e
GGBFS - Slag (economic allocation)	1,000.00	129.82	69.15
Factory Energy	0.00	57.92	30.85
	Total (kg) 1,000.00	Total (kg CO2e) 187.74	

Carbon intensity by life cycle stage

Carbon impact from raw materials (A1), transport to factory (A2), production activities (A3), transport to site (A4), and installation (A5).

Type	A1 (kgCO2e)	A2 (kgCO2e)	A3 (kgCO2e)
Fossil	17.99	111.83	57.92
Biogenic	< 0.01	0.00	0.00
Luluc	< 0.01	0.00	0.00
	Total (kgCO2e) 18.00	Total (kgCO2e) 111.83	Total (kgCO2e) 57.92

Report information

Current version	1.1
Publication date	February 10, 2026
Valid until	February 10, 2031
Independently verified	Declaration owner generated report Reviewed and verified by Rebuilt
Verifier contact	www.rebuilt.eco verified@rebuilt.eco
Geographic scope	This claim covers production in Australia
Data collection period	1 July 2024 - 30 June 2025
Standards compliance	ISO 14040, ISO 14044, ISO 14064-3, ISO 14067, ISO 14071
Product Category Rules (PCR)	EN 15804+A2:2019

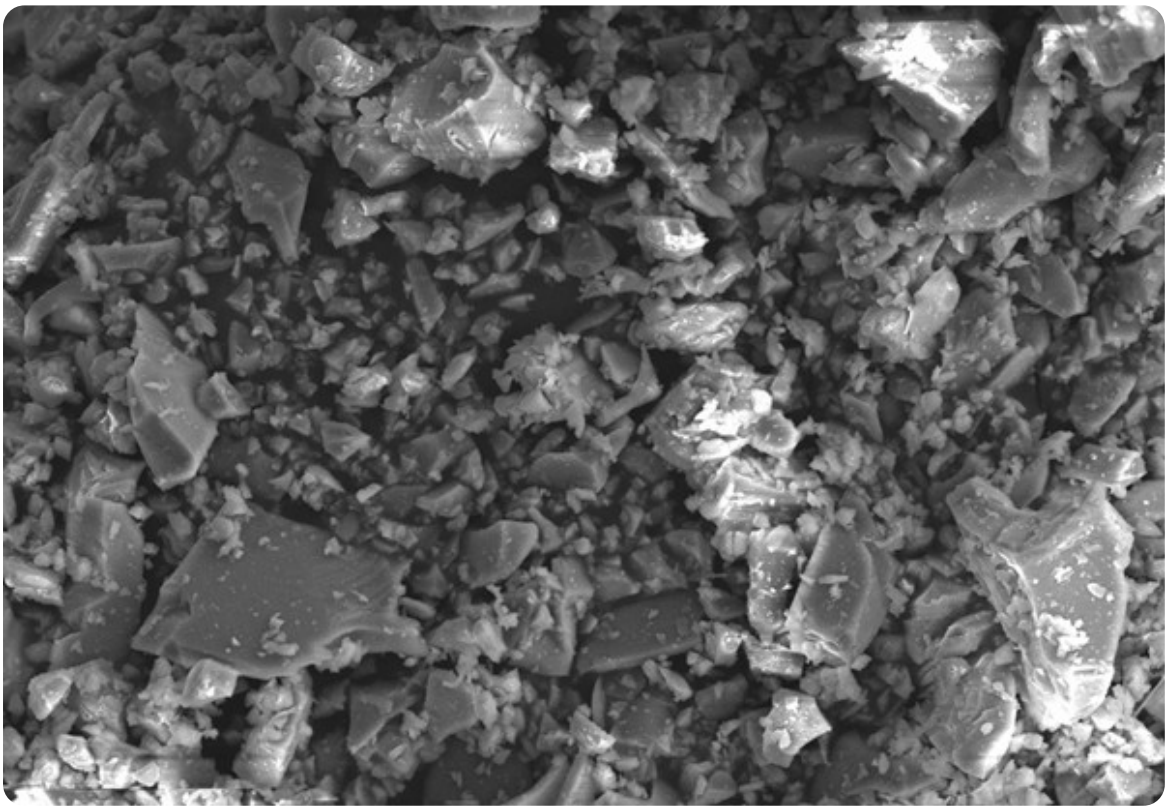
This PCF report has been created and verified in accordance with:

ISO 14067 ISO 14064 GREENHOUSE GAS PROTOCOL International Standard on Sustainability Assurance ISSA 5000

Company information

Declaration owner	Cement Australia Pty Ltd
Company description	Cement Australia's main business involves the manufacture and sale of cement and cementitious products in Australia. Cement Australia manufactures high performance cement products, including customised blends for special applications. In addition, we supply concrete-grade fly ash and ground granulated blast furnace slag, along with high grade lime products in bulk and packaged forms. Our products meet required Australian Standards and have been tested to withstand Australian climate conditions. Cement Australia operates in accordance with its management systems, which are certified to the following International Standards: • ISO 9001 Quality Management Systems • ISO 14001 Environmental Management Systems • ISO 45001 Occupational Health and Safety Management Systems.
Company location	Pinkenba, Australia
Manufacturing facility	Refer to product description
Manufacturing location	Refer to product description

Product information



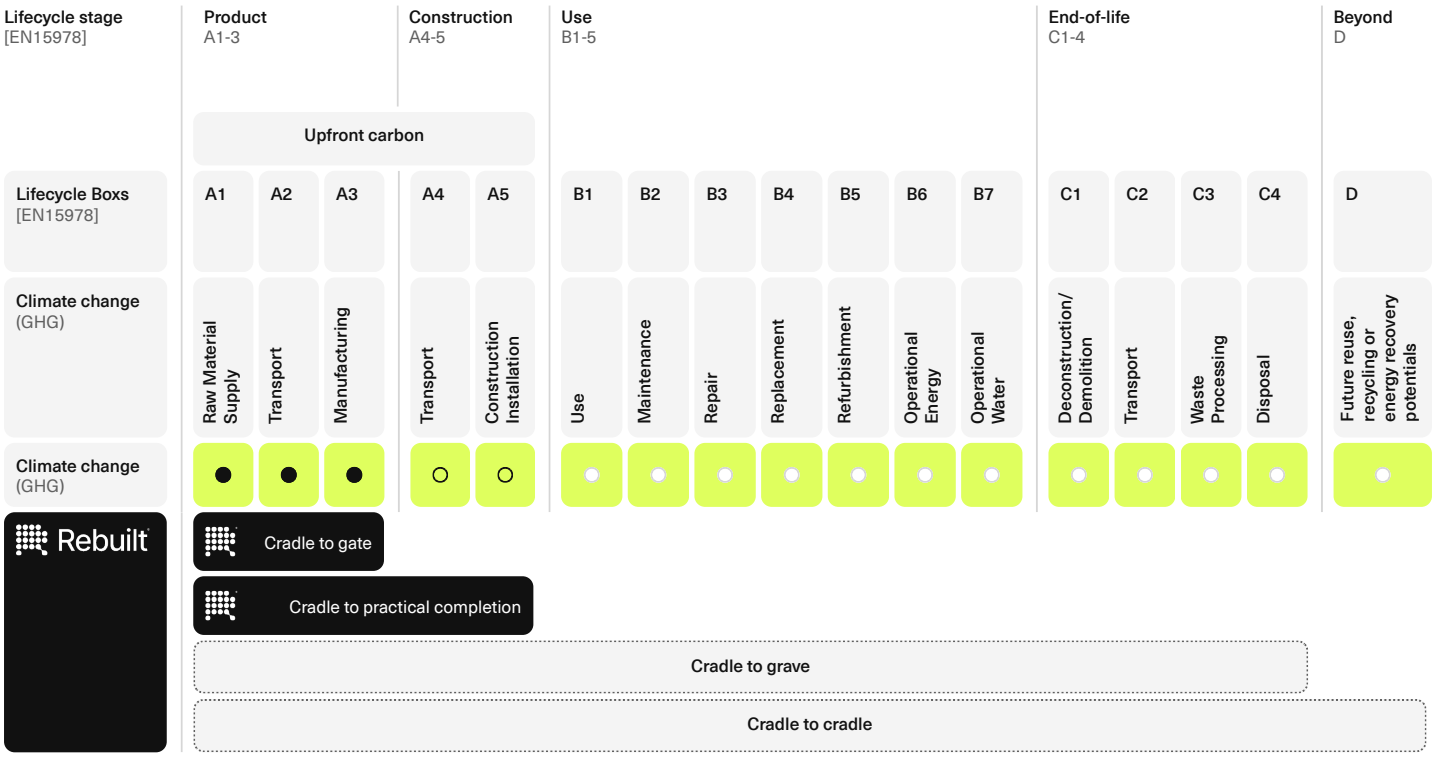
Product name	GGBFS - Slag
SKU	-
Description	Ground-granulated blast-furnace slag (GGBFS) is produced by quenching molten iron slag (a by-product of iron and steel-making) from a blast furnace in water, to produce a granular product that is then dried and ground into a fine powder. GGBFS enhances a range of performance characteristics such as the reduction of the heat of hydration in mass concrete pours, reduction of concrete permeability and improvement of durability properties in resistance to aggressive environments. Similar to fly ash blends, early age strength development of slag blends is slower than straight cement concrete however strength development from 28 days onwards is equivalent or better. Cement Australia GGBFS complies with the requirements of Australian Standard AS3582.2. Cement Australia source GGBFS from steel mills across Australia and internationally, and deliver to multiple Cement Australia distribution sites, including but not limited to, Bulwer Island QLD, Newcastle NSW, Port Kembla NSW and Melbourne VIC. Of these, the site with the highest associated carbon footprint (Melbourne) was used to represent all sites. Packaging Supplied in bulk without packaging.
Net weight (kg) per declared unit	1,000.00
Declared unit	1 tonne For the purposes of this report, declared unit is taken to be an individual unit as sold.
Recycled content	-
ANZSIC	2031
UNICLASS code	Pr_20_31_12

Technical information

Report boundary

This declaration shows the global warming potential (GWP) of the greenhouse gases embodied in this product, expressed in kilograms of carbon dioxide and equivalent gasses with global warming potential (kgCO2-e) and is based on the results of a pre-verified LCA performed in accordance with ISO14067 process and procedure as well as ISO14025 and nominated PCR EN15804.

NOTE: This declaration is limited to the life cycle stages shown in the table below.



A1 - Raw Material Extraction

The raw materials stage also called background or upstream covers the extraction and production of the raw materials needed to manufacture the product. It includes the processing of the extracted raw material to the point where it can be made into a recognisable part.

A2 - Transport Raw Material to Factory

This stage outlines the calculation of CO_2 emissions (Stage A2) for transporting raw materials to the factory. It considers transport modes, distances travelled, and material weights to calculate emissions.

A3 - Manufacturing

Converting raw materials into parts and made into the final product. It considers energy usage, packaging, process emissions and production waste.

A4 - Transport to Site

Not reported as part of this scope

A5 - Construction & Installation

Not reported as part of this scope

B - Use Phase

Not reported as part of this scope

C - End of Life

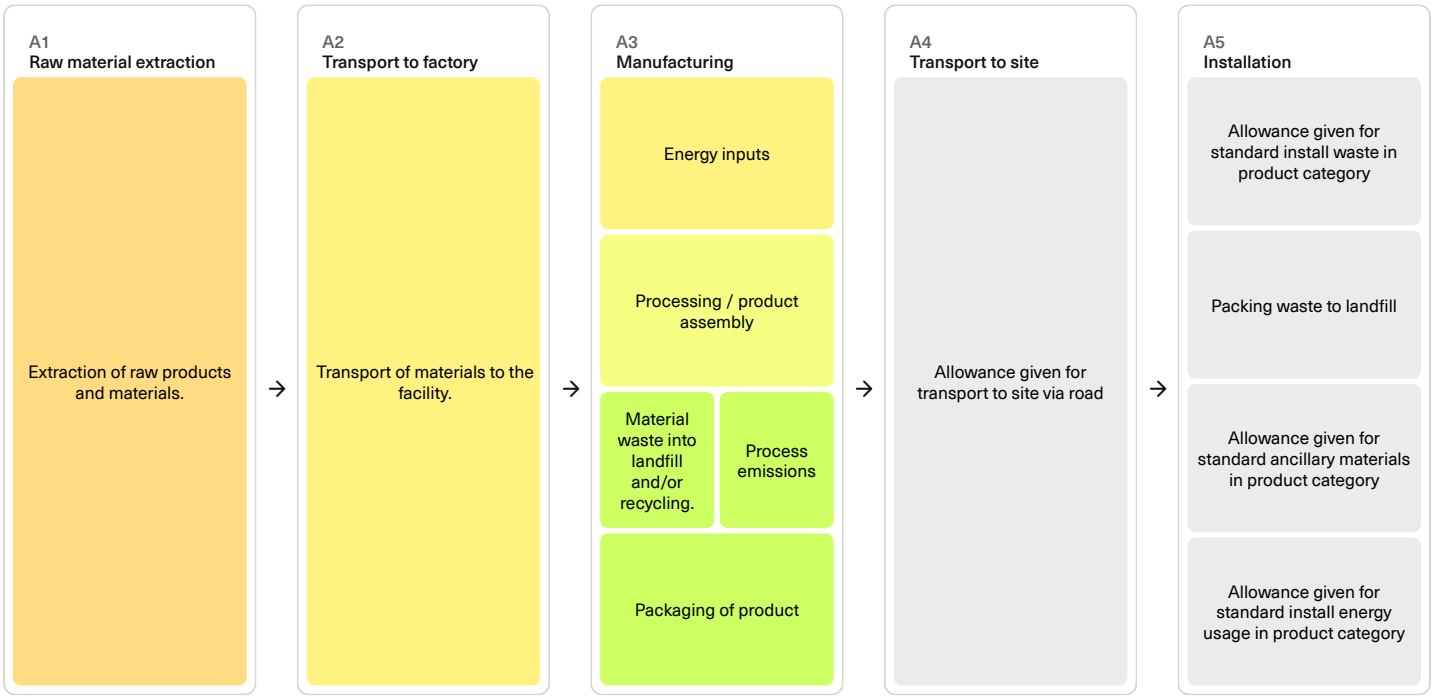
Not reported as part of this scope

D - Beyond

Not reported as part of this scope

Technical information (continued)

Process flow diagram



Exclusions from A1
None

Exclusions from A2
None

Exclusions from A3
None

Exclusions from A4
Not reported as part of this scope

Exclusions from A5
Not reported as part of this scope

Cut-off criteria

Individual processes may be excluded if their contributions to the total system's environmental impact are less than 1%. The aggregate cut-off criteria of this PCF follows PCR 2019:14 guideline where a minimum of 95% of total input (mass and energy) for each life cycle stage are included. Exclusions from the PCF is outlined in "Data Assumptions, Choices and Limitations".

The use stage is excluded from the study due to the uncertainty related to the multiple possible applications of the products assessed.

The following processes were left out of the system boundaries, in conformity to usual practices in carbon footprinting: labor, commuting of workers and administrative work.

Allocation procedures

The allocation method for this PCF is based on a physical (mass) basis. The energy used by the product is allocated by normalising the total energy used in the factory to the total mass of the product to the total production mass output from the same factory.

Results

Total upfront carbon (Fossil)
(A1-A3)

187.74 Carbon Footprint
kg CO2e /tonne

Carbon intensity by life cycle stage

Type	A1 (kgCO2e)	A2 (kgCO2e)	A3 (kgCO2e)
Fossil	17.99	111.83	57.92
Biogenic	< 0.01	0.00	0.00
Luluc	< 0.01	0.00	0.00
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	18.00	111.83	57.92

Carbon intensity by raw material

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
GGBFS - Slag (economic allocation)	17.99	< 0.01	< 0.01	18.00
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	17.99	< 0.01	< 0.01	18.00

Carbon intensity by transport type

Material	Transport mode	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
GGBFS - Slag (economic allocation)	Multi-leg transport	111.83	0.00	0.00	111.83
		Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
		111.83	0.00	0.00	111.83

Carbon intensity by energy source

Energy type	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
Purchased from grid (high voltage)	57.92	0.00	0.00	57.92
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	57.92	0.00	0.00	57.92

Carbon intensity by packaging material

Results (Continue)

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	0.00	0.00	0.00	0.00

Carbon intensity by process emissions

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	0.00	0.00	0.00	0.00

Carbon intensity by waste treatment

Material	Waste treatment type	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
GGBFS - Slag (economic allocation)	N/A	0.00	0.00	0.00	0.00
		Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
		0.00	0.00	0.00	0.00

References

- ISO 14040:2006+A1:2020 - Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2006+A2:2020 - Environmental management - Life cycle assessment - Requirements and guidelines
- ISO 14067:2018 (First Edition) - Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification
- EN 15804:2012+A2:2019 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- Australian National Life Cycle Inventory Database (AusLCI) version 1.42 (May 2023)
- ecoinvent database v3.11 (November 2024)
- Australian National Greenhouse Accounts Factors 2024